THE PROFESSIONAL GEOGRAPHER

The Journal of The Association of American Geographers

UNIVERSITY OF NEBR.
JAN 17 1952

CARTOGRAPHY ISSUE

ARCH GERLACH, Editor

Volume III September, 1951 Number 4

EDITORIAL RESPONSIBILITY

When the Denoyer-Geppert Co. embarked in the field of school map making in 1916, Mr. L. Philip Denoyer, as Managing Editor, organized a group of editors for its geographical and its historical maps. No American firm had ever utilized scholarship in these fields to the extent that it was employed by the then young firm. The staff included no less a personage than William Morris Davis, known then as "the dean of American geographers." He, along with Sumner W. Cushing, was editor of the maps of Europe. Charles Redaway Dryer was editor of North America, Walter Tower, South America and the Western Hemisphere, Jacques W. Redway, Africa, Ellsworth Huntington, Asia and the Eastern Hemisphere. Breasted, Huth, Harding, Hart, and Bolton were editing the historical maps.

Map users the world over showed their appreciation of this "wholesale" use of scholarship in map making, and they are still showing it. It set the pace for others in the same field. Schools everywhere have benefited.

In the next issue we shall list the scholars who at present are responsible for what goes into our maps. In the meantime consult our catalog number 51.

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EDITORIAL PAGE

The New Appearance of The Professional Geographer is due to the use of electromatic machines with bookface type, courtesy of the Library of Congress. This type permits fifteen to twenty percent more content per page without increasing reproduction costs.

News Deadline for the November issue of The Professional Geographer is October 15. Items received by the Editor after that date cannot be published, unless they are suitable for a subsequent issue.

A Second-Class Permit, like that used in mailing the Annals has been applied for. This should reduce the annual postage bill about eighty percent. Please keep the A.A.G. Central Mailing Office, Map Division, Library of Congress, informed of your current address whenever you move.

The Denoyer-Geppert Company, beginning with this Cartography Issue, will reproduce The Professional Geographer and mail it from their Chicago plant. They will also accept responsibility for the solicitation and arrangement of advertising matter, within the limits of general policies established by the A.A.G. council. In the future all requests for information concerning advertising space or rates, and all drafts or cuts for advertisements in The Professional Geographer should be addressed to the Denoyer-Geppert Company, 5235 Ravenswood Avenue, Chicago 40, Illinois.

Professor Erwin Raisz, of the Institute of Geographical Exploration, Harvard University, has been largely responsible for the publication of a special Cartography Issue of The Professional Geographer both last year and this. His assistance in assembling and editing materials for this issue is deeply appreciated.

Arch C. Gerlach

The Professional Geographer, the Journal of the Association of American Geographers, New Series, Volume III, Number 4, September, 1951. Published bi-monthly at the Denoyer-Geppert Company, 5235 Ravenswood Avenue, Chicago, Illinois. Annual subscription $1.50. Editor: Arch C. Gerlach, Map Division, The Library of Congress, Washington 25, D.C.

Application for entry as second-class matter is pending.

CARTOGRAPHY ROUND TABLE

The following papers were presented at the Cartography Panel discussion at Chicago, March 22, 1951, during the national meetings of the A.A.G. The theme of the panel was THE TEACHING OF CARTOGRAPHY.

SURVEY OF THE TEACHING OF CARTOGRAPHY IN THE UNITED STATES AND CANADA (1950-1951)

George Kish
University of Michigan

Number of institutions answering questionnaire . . 96
Institutions offering cartography courses 75
Institutions not offering cartography courses . . . 21
Institutions offering 1 cartography course 39
Institutions offering 2 cartography courses . . . 18
Institutions offering 3 cartography courses 10
Institutions offering more than 3 cartography courses:

University of California (Berkeley)	4
University of Chicago	8
University of Georgia	6
University of Maryland	6
Michigan State College	6
Northwestern University	6
Pennsylvania State	6
Syracuse University	4
University of Wisconsin	6

Institutions offering aerial photo and surveying courses . . 9
Cartographers teaching courses (tentative) 21

UNIVERSITY TRAINING FOR GOVERNMENT CARTOGRAPHERS

Arthur H. Robinson
University of Wisconsin

Before commenting on the training of Government cartographers and the problems associated with undertaking it, one should understand that there are several different kinds of government map work toward which cartographic training could be aimed. In a very general sense there are three major categories of governmental map activity. First there is the group concerned with already made maps, such as the map intelligence, the map information, the map library, and the map research organizations. Second, there is an even larger group concerned with large scale mapping and compilation, ranging from military map services to the domestic surveys of various kinds, from the topographic to the land use. Third, there is a somewhat smaller group engaged in small scale, compilation, special purpose map-making. It is toward this kind of geographic cartography (which was the main subject of the roundtable) that the bulk of these remarks are aimed. The other two map fields are, however, intimately involved in the training problem .

Small-scale map-making may be divided into several phases but that phase which is usually termed compilation is the activity for which university or college training is most appropriate. The fundamentals of training for compilation, in the opinion of this observer, are the following:

Design

The cartographer must know how to design a map, yet nowhere has our training been weaker than in this field of visual competence. It is necessary that the cartographer know the principles of perception and how line variation, gradient tints, layout, balance, lettering size, color, brightness, lettering styles and a host of similar visual elements affect the total ability of the map to tell a story. To choose but one example, he must be initiated into the principles of the perception of brightness; why it is that the distinguishing of even eight grays from black to white is difficult; and why it is that a visual gray scale is a logarithmic proposition and not a simple arithmetic progression of black and white concentrations. Similarly, most of the elements of design operate according to fairly well established principles. To make a good visual map a cartographer must acquire a knowledge of these principles.

Reproduction Techniques

Probably ninety-nine percent of the small-scale maps made in the government are made for reproduction. Any map made for reproduction ought to be designed with the possibilities and limitations of the reproduction method in mind. Even the relatively simple effects of progressive reduction on relative visibility of lines, symbols, and lettering are startling, to say the least. The possibilities of reversing negatives, screening, halftoning and the host of other effective reproduction techniques are large indeed. The would-be cartographer should have some instruction in these techniques.

As a further reason for the cartographer to be familiar with technical aspects of reproduction it might be observed that unless he can talk the language of the printer and lithographer he is likely to find that the printer, who quite understandably prefers routine, is actually doing much of his map designing. This is like the blind leading the blind.

Typography

Most government cartography employs stick-up lettering. Therefore the cartographer should have some training in typography. The choice of lettering styles and sizes is, like all the other elements of map design, based on prin-

ciples as well as the techniques and language of typography.

Statistical Representation

A considerable proportion of the cartographer's concern is with statistics, in the broad sense, for few maps can be made without the problem of statistical method and representation arising, even if it be such a common thing as qualitative or quantative categorizing of cities and their symbolization. The elements of statistical method and the principles of symbolization are necessary parts of the cartographer's training.

Projections

Most cartographers remember, with mixed feelings, their training in projections. Projections are an important part of cartographic training, for a knowledge of projections is as necessary for a cartographer as a knowledge of concrete is for an architect. Although concrete and projections are not strictly comparable, they both seem hard, and each forms a foundation on which a structure is to be built. Proper utilization is the fundamental problem. The cartographer needs more training in how to choose and use projections than he does in how to calculate and construct them. Specialists are available for construction - for map projections as well as concrete.

Drafting

The cartographer, to fit into government work, should have instruction in the drafting techniques generally employed. This involves a knowledge of plastics, inks and other media, instruments, methods of correction, and so on. This is easier said than done in a university, for a course in drafting does not fit well in a college of letters and science.

Compilation

Last, but most important of all, the cartographer must also be a geographer, for as has been often said, a cartographer is a geographer who can also make maps.

One of the cartographer's major compilation activities is that of generalization. Intellectual as well as visual training is required for, as von Sydow once pointed out, only a master of his subject can generalize well. A good fundamental training in geography is indispensable. As a homely example of the innumerable kinds of geographical decisions a cartographer must make, he cannot do a very good job of compiling (that is, selecting and generalizing) the rivers on a small-scale map unless he knows a good bit about the area, its climate, and its geomorphology.

This rather sketchy outline of the kinds of training that a government cartographer-to-be ought to receive is infinitely easier to recommend than to accomplish. At the outset it was suggested that there were two other governmental map fields for university trained people. These fields are also a responsibility. Thus we find that training in map coverage, map evaluation, elementary geodesy, air photo interpretation, types of basic surveys, grid systems and a host of other aspects of maps and mapping are also necessary parts of university training in the field of maps. All this, and cartography too, is quite a load to place on the instructional assets of a university or college department.

A large part of the difficulty lies in the fact that the profession of cartography, in the broad sense, is hardly established in the minds of most people, and students are no exception. A considerable proportion do not

even know what the word 'cartography' means. Consequently, the demand for a cartographic major or specialization is relatively small so far as the number of students is concerned. This means that the university and its geography department cannot afford much academic staff concentration on cartography. In other words we are wobbling around on the horns of a dilemma. One of the horns is that, for administrative reasons, adequate instruction cannot be provided; the other horn is that the lonesome instructor is faced with a subject matter coverage that is staggering. That horn is uncommonly sharp.

Therefore, the university or college now can only hope to provide a kind of elementary basic training in the principles and techniques mentioned above. Except for the occasional doctoral candidate, anything more than this once-over-lightly training is quite beyond the present capacity of the average university.

AIMS AND LIMITS IN TEACHING CARTOGRAPHY

George Beishlag
University of Maryland

The increasing respectability of cartography is gratifying to those of us who saw the beginnings at Charlottesville and watched the recognition given by the A.A.G. at Madison and Worcester. According to George Kish's report, cartography stands a good chance of becoming a field of geography in which advanced degrees may be regularly awarded. This is a good thing for cartography and a good thing for geography.

As a result, new cartography classes will be added to many departments and old classes will draw increased enrollments. The new students will be of two kinds; cartography majors, and geography students who want to learn something about maps. The geography students will probably outnumber the cartography majors.

It is natural to organize cartography courses with the training of cartographers in mind. If cartographers do not train their own students, who will? Richard Edes Harrison testified at Worcester that nobody trained the cartographers he knew.

However, many of the new enrollees in cartography classes will not want to learn to be cartographers but to be better geographers. What happens to them in cartography classes may determine the future relations of cartography and geography. If cartography teachers put these new students to learning hand-lettering or to constructing a series of different map grids from mathematical calculations, then good relations between cartography and geography may be jeopardized. Such training is neither interesting nor very useful to most geographers. I was a geographer for the U.S. Government for six years. During four of those years I was a 'map expert'. At no time did I have to hand-letter a map or construct a grid. How much less does the ordinary geographer need such accomplishments. Cartographers cannot afford to have geographers consider cartography a sort of glorified handwork.

What, then, can the cartographer teach the geography student that will benefit him? There are two things: one, he can teach the geographer how to use existing maps, and two, he can teach the geographer how to make a map that will be a credit to a geographic study.

Some may protest that the use of maps is taught in beginning geography classes. It frequently is, but the cartographer can teach it better, particularly the cartographer who has struggled through a big compilation job.

The use of maps can best be taught in a laboratory with the student up to his ears in maps and with a good cartographer available for consultation. This requires maintaining a collection of maps - a nuisance which usually falls to the cartographer of any university staff. If the cartographer plans to use those maps to instruct geography students, he can insist on student assistant help in arranging and maintaining the collection. If, on the other hand, the cartographer pushes the job off on the college librarian, he can expect less care for the collection unless a particularly interested or specially trained map librarian is assigned to the job. If the cartographer wants to build a map collection, he can procure maps from the Army Map Service, the Library of Congress, and the Map Information Office of the Department of the Interior as well as through the State Department's External Research Staff, Office of Intelligence Research.

If we suppose that the cartographer has enough maps at hand for teaching purposes, what then? The student should be taught how to find what maps are available, how to select useful maps, and what to expect from a map. This is a big order. It means making the student map-conscious. He should be taught to turn to maps for research material as readily as he turns to books and other printed materials.

The cartographer should instill an appreciation of projections using as an approach the procedure published by Arthur Robinson in The Annals, December, 1949, explaining not how a projection is made but how it distorts areas shown upon it. The cartographer might also explain that as scales become larger and larger, the projections become less and less important. Since most geographical studies are less than continental in size, this knowledge will relieve many minds.

Prime meridians should be explained even if the world-wide trend is toward the use of Greenwich. The student might run across a country map with the prime meridian through the national capital or come upon a map like one of a part of the old Austro-Hungarian Empire which uses both Ferro and Greenwich meridians.

Perhaps the greatest service that can be done for a budding geographer is to get him straightened out on scales. Although the representative fraction type of scale (like 1:1,000,000) is fast becoming the most common for small maps, there still exist many large scale maps with scales expressed in inches to the mile and even some scales measured in chains. More important even than understanding the way the scale is expressed is understanding the limitations of scale and the generalization necessary for different scales.

An appreciation of publishing authorities and dates of issue should also be imparted along with the knowledge that out-of-date maps cannot give current information no matter how accurately they are made. On the other hand, an old map may provide much information for research or special purposes.

Maps frequently contain information not found in books or other publications, particularly if the maps are large-scale topographic sheets. Some water holes in North Africa can be found in no other published source. Students should also be encouraged to compare one map with another in order to discover the particular uses of each.

An introduction to the problems of place names should be given. It is easy to scoff at the British who label a town in Italy, Leghorn (known to the Italians as: Livorno). Most geographers would advocate the use of local names to solve that problem. But what should be done with Russian and Korean names that are not written in our alphabet and which most Americans cannot pronounce? An excellent exercise in the puzzle of changing place names is to set the student to tracing the changes in place names in a succession of maps for a small location in the Balkans that has been under Turkish, Serbian, Austro-Hungarian, and Yugoslav rule since 1900.

When a geographer becomes trained in the ways of maps, he digs up the most amazing things. The title of a map is not always the best clue to the major use of the map. A map titled, 'The Distribution of Cows', a Turkish Government publication, provides the most accurate delineation of internal political boundaries of Turkey procurable. Maps also occur in the most unlikely places. The most useable map of pearl fisheries in the Persian Gulf is in a book of adventure tales. The map contains little background material but can be used profitably in conjunction with a large-scale topographic map of the area.

After comparing enough maps, the student will understand how four reputable geographers can each make a map of vegetation which is not at all like any of the other three. The student will learn that the selection of data and categories together with the choice of mapping method determine the usefulness of the finished map.

If the cartographer can destroy once and for all the concept of 'good' and 'bad' maps, he will do a great service to young geographers. There is no necessary relation between the accuracy and the neatness of a map. Sometimes a poorly-drawn map may be a useful one. Geographers should be taught to think of maps as useful or not useful instead of good or bad.

The second great contribution the cartographer can make to the student is to teach him how to make maps that will better illustrate his studies than the maps he makes now. Some cartographers think this is the cartographer's sole reason for existence.

Many of these problems should be easy for the young geographer after he has handled many examples of good cartography in the map laboratory. He should have absorbed many of the good judgments and tastes required.

The actual drafting should be as painless as possible. Maps should be traced on a light table from suitable base maps and lettered with lettering guides or printed type.

The preceding is merely suggestive. Others may add valuable aspects that have been overlooked or expand topics that have been listed. It is my belief that adoption of some such program will be to the mutual advantage of cartography and geography.

THE NEEDS OF PRIVATE INDUSTRY IN THE TRAINING OF CARTOGRAPHERS

Clarence B. Odell
Denoyer-Geppert Company

In answering the question of what are the needs of private industry in the training of cartographers, one should be a little cautious, and include qualifying statements, since the demands made of cartographers may vary from company to company. Nevertheless, some ideas will be presented here to indicate what should be expected in the training of a cartographer.

I. The Professional Cartographer

For the most part, the professional or 'practicing' cartographer, or the 'cartographic engineer' of American map companies is a product of years of experience on the job. His manual skill is a product of a thorough training and many years at the drafting table. His linework, his lettering, and placing of names represent a 'feel' based upon years of experience as to what makes a good map. In some cases a determination to become 'non-academically' trained in related subject matter has been basic in creating the group of professional cartographers of such extreme value to commercial map companies. Not all individuals, however, have developed and advanced beyond the technician state of being highly skilled draftsmen and artists of map production.

To a degree the activities of the cartographer in private map companies are those of a specialist. The designation 'cartographer' itself may be limited only to those of special skill, and as a title given in reward for many years of experience. Even then some cartographers may do only hachuring or other types of relief representation. Others may do compilations and initial drafting, with 'tracers' or draftsmen completing the color separation drawings on blue line boards or plastic overlays.

In recent years the photographic and printers skills have contributed to map production and have been handled by those trades. Few, if any, individuals of this phase of map production have come into the field of cartography through geography and academic cartography. As a rule such persons are not classed as cartographers.

II. Training of Cartographers

Following the theme of the discussion the assumption is made that the teaching of cartography is to be performed by academic institutions. In the past, however, and it is generally true today, the demands of private industry for cartography, for the most part, have been such that commercial cartographers have been trained in the business, and have not come trained as cartographers from academic departments of geography. As Harrison pointed out last year, many free-lance commercial cartographers have gone into map-making from routes other than geography. In the November, 1950, issue of The Professional Geographer a challenge was presented to the universities offering cartography in their geography departments. In effect this challenge indicated that if geography departments expect to turn out professionally trained cartographers they must offer additional work in the field of map-making and map reproduction techniques. There are some indications that such a challenge is to be met. A number of departments have recommended prospective employees to map companies. One department requested a lecture on the commercial side of map-making. Others have expressed interest in hearing more of the problems of preparing maps for publication. In some cases the applicants have had commercial experience,

and then have received valuable cartographic training either as graduate or undergraduate students. The interested departments realize their deficiency in providing the type of training needed for cartographers to go into the commercial field, and have expressed a desire to remedy the situation.

Raisz, in the introduction to his textbook, General Cartography, asks the following question: 'What should be included in a college course in Cartography, as distinguished from Geography and other Sciences that provide the cartographer with his material?' The content of the courses offered in Cartography is of extreme significance to the topic of this discussion. Raisz states that 'the cartographer is both a scientist and an artist.' He indicates that the cartographer must have a thorough 'knowledge of his subject and model, the Earth.' In addition, the cartographer must be a technician and be familiar with the various techniques used in putting information onto the original drawings, and in the processes relating to the production of maps in quantity. Raisz goes on to say that 'a cartographer is fifty percent geographer, thirty percent artist, ten percent mathematician, and ten percent everything else. At times one might think that the 'fifty percent geographer' and the 'ten percent everything else' should be reversed. This 'ten percent everything else' is all important, however, and is perhaps the challenge being given to the departments of geography if they wish to supply commercial firms with map draftsmen and cartographers. The skills and knowledge which make up this fluctuating 'ten percent of everything else' represent the offerings now obtained largely through experience.

There are times when the 'fifty percent geographer' should be altered. For example, the cartographer might be called upon to make history maps. In this case perhaps he should be forty percent historian, ten percent geographer, and so on. The point being made is that the commercial map-maker fundamentally is a technician and an artist skilled in the various methods of design and map production. In many cases though, the actual map-maker may be very limited in his knowledge of the subject matter being put on the map. It is true, of course, that subject matter is the foundation for the map being made. Consequently, the map compiler must know both subject and matter and techniques.

According to the report by George Kish in the November, 1950, issue of The Professional Geographer, there are nine colleges and universities offering more than three courses in Cartography. Of these nine, seven offer six or more courses. Seven schools plan to grant advanced degrees, either the M.A. or Ph.D., in the field of Cartography. In preparing these persons for advanced degrees in the field of Cartography it is hoped that departments will recommend subject matter courses in many related fields. In addition to the related fields in the Social Sciences there are fields in the Physical Sciences using maps and charts.

There are great possibilities for commercial cartographers in fields other than those of the well known commercial and educational map-making companies. In various business fields, maps are used in advertising, journalism, and sales promotion. A good foundation in the principles of those fields along with instruction in the methods and problems of cartography would enable a person to be qualified for map-making activities of commercial firms engaged in such endeavors. An understanding of sales problems provides a basis for a cartographer to develop sales analyses atlases. Oil companies, and other organizations prospecting for or utilizing natural resources, employ persons trained in map-making. A few years ago a

student employed by the Federal Power Commission was taking a course in maps which he might include in his reports. He was not a geographer, but he wanted to become map conscious and to learn something of the problems of map production for his particular field of knowledge.

III. Commercial 'Cartography' Covers Many Fields

At the present time an academically trained 'cartographer' knows little concerning the complete gamut of operations needed to produce maps and atlases. It is not, however, the intention of this discussion to say that all of the subject matter dealing with the procedures utilized by the photographer, lithographer, and printer in black and white or colors should be a part of the cartography curricula in the colleges and universities. In the past it has not been the function of departments of geography to prepare cartography specialists for map companies, or government map agencies. The principles and history of cartography have been presented for geographers going into the academic and/or geographic research fields. The trend and interest, however, in some of the centers of geographic training is toward giving greater coverage on the problems of compilation, production, and reproduction of all types of maps. This is a good sign because the demand for academically trained personnel in commercial firms is increasing.

IV. Challenge to College and University Geography Departments

In conclusion, in answer to the question 'What experiences are needed to prepare cartography majors for greater possibilities in commercial activities?' it is recommended that the following topics be covered in varying degrees along with the basic courses in cartography:

1. Type selection and application to map materials
2. Varieties of plastic sheets and blue line drawings
3. Map intelligence and map sources
4. Statistical source materials
5. Map and chart design
6. Lithography and printing procedures
7. Photographic methods and materials
8. Cost factors involved in all processes.

Thus the universities offering cartography in their geography departments have a challenge. In the future, can those departments turn out professionally trained cartographers in the fields of geography, history, political and social science? Can they broaden their cartographic offerings to cover not only the subject matter of their academic fields, but also to provide the instruction relative to familiarity of map-making techniques or drafting and map reproduction all the way from the planning stage to the printed sheet?

Since map-making is a profession in itself, it cannot be expected that one or two courses, or even six or seven courses given in several of the universities, will be sufficient to qualify a person for a career in map-making without some additional apprentice type of experience. If these items are to be taught, however, the private firms will be glad to receive the better trained personnel in the expanding needs of the map-making agencies of the country.

SUMMARY OF DISCUSSION ON THE TEACHING OF CARTOGRAPHY

Erwin Raisz
Harvard University

Listening to these excellent papers, I think we all received the same impression. Should it be university, government, or private firm, the basic requirements for a cartographer's education are about the same. All emphasize the difference between the training of a geography major and that of a professional cartographer, yet instruction in good design, projections, lettering, drawing techniques, methods of reproduction, are the same for both, differing only in degree. None of the papers failed to emphasize the fundamental importance of a good knowledge of geography for intelligent generalization. Perhaps the main difference was that while Odell emphasized cost analysis, such things are not so important in Washington where the breakdown of jobs is the problem.

I should have liked to hear a little more on airplane photography which is now shaping the destiny of our profession. Airphoto reading will develop the cartography student's understanding of land with its culture and relief; it will help him to realize scale problems, and the transformation of air photos into maps will enrich his store of symbols, and if colored photos become more common maybe we will achieve a more natural color scheme.

With the goal so clearly set, the task before us is to work for more cartography courses. Of the 500(?) colleges teaching geography, only 90(?) have an independent course in cartography. As an architect needs a course in drawing, as a student of literature needs to study language, so no geographer should be without a course in this basic tool of expression.

SELECTED RECENT MAPS AND ATLASES

Marie C. Goodman
Library of Congress

Alaska Map B, Edition of 1950, U.S. Geological Survey, 1:1,584,000, colored, 2 sheets, 54 x 78 inches.

Compiled from official maps of the Geological Survey and Air Forces. In addition to cities, highways, airports and mountain peaks, the map shows international boundaries and internal Judicial Divisions. The Aleutian Islands appear in an inset. The drainage pattern and glaciers are shown in detail. $1.00.

Eastern United States 1:250,000, U.S. Army Map Service, March, 1951, colored plastic relief models of six adjoining sheets: Cumberland, Charlottesville, Roanoke, Baltimore, Washington, and Richmond, each 21 x 31 inches, covering an area approximately 7,500 sq.m. (AMS V501).

These maps were molded on thermoplastic sheets after being reproduced by offset from the color plates used for the standard paper editions. They are not yet produced in sufficient quantity for sale or general distribution.

Literary Map of North Carolina, N.C. English Teachers Association, 1950, 1:1,000,000 approx., colored, 20 x 33 inches. Printed by Edwards and Broughton Company in Raleigh.

A very attractive pictorial map designed by Primrose (pseud. Mrs. Francis Paschal) which locates birthplaces and residences of authors as well as places immortalized in story and verse. A scroll in the margin lists authors who have received Mayflower Awards.

Map of Part of the Continent of North America, William Clark, ca.1812, 1:3,168,000, 4 sheet, hand-colored collotype reproduction (by the Meriden Gravure Company, 1950).

Major Land Uses in the United States, U.S. Bureau of Agricultural Economics, 1950, 1:5,000,000, colored, 25 x 39 inches.

F.J.Marschner uses thirteen color symbols to designate land types and land use on this attractive map. Available from Superintendent of Documents, $.75.

Major Migratory Routes in the Agricultural Labor Market, crop areas, seasonal work charts, state employment service headquarters offices. U.S. Department of Labor, U.S. Employment Service and Affiliated State Agencies, Farm Placement Service, 1951, 1:6,000,000 approx.,30 x 40 inches.

As the title indicates a mass of material on migratory labor is presented. The omission of arrows to show the movement of labor is regrettable. Some of the charts are difficult to read. The use of color and an alphabetical arrangement by states or a numerical listing of crop areas would improve the map.

Map of Long Island, Robert Ryder, ca. 1675, colored, reproduced in collotype from manuscript original in the John Carter Brown Library (Meriden Gravure Company, 1950), 24 x 32 inches.

An excellent facsimile of an early decorative survey produced in full size, it shows the whole of Long Island and an equal length of the opposite Connecticut shore. A number of place names are given, many with unfamiliar

spelling. Soundings are noted for lower New York bay. The parchment shows the influence of particular charts in its shape and in the characteristic writing on the land leaving the water free. It is remarkably exact for its age. A two-leaf 'Historical Note ...' accompanies the map. $12.00.

Meteorological Services in the United States, U.S. Weather Bureau, February, 1951. 1:5,000,000, colored, 25 x 39 inches. (W. B. Map 1806).

Shows location and types of surface weather reporting stations operated by the Weather Bureau, Civil Aeronautics Administration, Air Forces, Navy, Coast Guard and other agencies; flight advisory weather service units, Weather Bureau regional headquarters, airport stations, and city offices. Fourteen insets, 1:500,000, show weather services in major U.S. cities. This map will interest the armchair forecaster as well as the student of meteorology.

National Forests, State Forests, National Parks, National Monuments, and Indian Reservations, U.S. Forest Service, 1951, 1:7,000,000, colored, 18 x 29 inches.

Contains valuable information on U.S. forests and their administration. In addition to the contents mentioned in the title, the map shows forest boundaries corrected to May 1, 1951, grazing districts, and purchase units (areas within which lands are being acquired). Headquarters of national forest regions, experiment stations, national forest and purchase unit supervisors, and state foresters are listed in the margin. It has value in studying conservation and land use and in planning recreation. U.S. Forest Service has limited stock.

Natural Gas Pipe Lines in the United States, Alec M. Crowell, 1950, 1:7,500,000, colored, 20 x 29 inches.

Pipe lines which are 'proposed', 'approved', and 'operating' as well as those 'under construction' are shown. Numbers key these lines to the 118 gas companies which control them. The map sells for $2.50 at the publisher's office in the Carondelet Building, New Orleans.

Soil Conservation Districts, U.S. Soil Conservation Service, 1950, 1:9,500,000, colored, 13 x 20 inches.

Administrative map showing districts organized prior to 1941, 1941 through 1943, 1944 through 1946, 1947 through 1949. The growth of the conservation movement in the northern and western states is obvious. Free while stock exists.

State Maps, U.S. Geological Survey, 1950-51, 1:500,000, varying sizes.

Designed to replace earlier maps which have not been revised in many years, this new series will be of special value in teaching, planning, engineering, and recreation.

Base maps: Indiana $.60
Iowa $.60
Maryland and Delaware (printed, 1948) $.25
Massachusetts, Rhode Island and Connecticut (printed, 1948) $.25
Mississippi $.50
New Jersey $.25
Wyoming $.60

Base maps with highways:
Indiana $.60
Iowa $.60
Mississippi $.70
Wyoming $.80

Base maps with highways and shaded relief:
Maryland and Delaware $.40
Massachusetts, Rhode Island and Connecticut (printed, 1948) $.40
New Jersey $.40
Shaded relief only:
Massachusetts, Rhode Island and Connecticut $.40
Maryland and Delaware $.40
New Jersey $.40

Ten Rivers in America's Future, v.2, Report of the President's Water Resources Policy Commission, Government Printing Office, 1950, $5.00.
Contains a number of maps showing 'Water Resources and Land Use' for the following river basins:
1. Alabama-Coosa, 1:2,250,000, 10 x 9 inches
2. California Central Valley, 1:2,000,000, 10 x 18 inches
3. Colorado, 1:3,800,000, 10 x 14 inches
4. Columbia, 1:5,000,000, 10 x 12 inches
5. Connecticut, 1:1,800,000, 10 x 9 inches
6. Cumberland, 1:2,250,000, 10 x 11 inches
7. Missouri, 1:5,250,000, 10 x 17 inches
8. Ohio, 1:3,300,000, 10 x 9 inches
9. Rio Grande, 1:3,750,000, 10 x 19 inches
10. Potomac, 1:1,600,000, 10 x 13 inches
11. Tennessee, 1:2,000,000, 10 x 15 inches.

Topographic Map of the Black Canyon of the Gunnison National Monument, Colorado, U.S. Geological Survey in cooperation with U.S. National Park Service, 1950, 1:24,000, colored, 21 x 27 inches. Contour interval: 40 feet.
A strip map in shaded relief showing the deep incision made by the river in the plateau and mesaland. A diagram in the margin shows a profile of the canyon at the Narrows. $.35.

United States of America, Aero Service Corporation, Philadelphia, 1950, 1:3,125,000, colored, 40 x 64 inches. Vertical exaggeration: 20 to 1. $37.50.
This three-dimensional relief map, made of Vinyl plastic, weighs only 2 1/4 lb. Self-framed and lithographed in eleven layered tints, it is especially suitable for teaching at both primary and secondary levels.

U.S. Railroads Classified According to Capacity and Relative Importance, Edward L. Ullman, Simmons-Boardman Publishing Corporation, 1950, 1:4,500,000, colored, 29 x 42 inches.
Shows single and multiple track lines, electrification, centralized traffic control, and automatic signals. Inset shows three classes of railways in the Northeast.

MAPS OF FOREIGN AREAS

Asia and Adjacent Areas, National Geographic Society, March, 1951, 1:5,000,000, colored, 28 x 36 inches.
Accompanying index contains 7,646 place names. Inset shows the world on the north polar projection.

Carte Ethnolinguistique (of Indo-China), Ecole Francaise d'Extreme-Orient and Service Geographique de l'Indochine, 1949, 1:2,000,000, colored, 33 x 24 inches (No.9072). Base: Carte de l'Indochine au 2,000,000e.
Twelve different ethnic and language groups are distinguished, but on some copies the printing and registry are not sharp.

Diagram of the Planting Districts of Ceylon Showing the Principal Estates, Survey Department, Ceylon, 1950, 1:190,080, colored, four sheets, each 24 x 27 inches.

Colors differentiate estates raising tea, rubber, coconuts, cacao, cinnamon, cardamon, and citronella. Roads, railroads, hospitals, rest houses, post offices, and police stations are shown. Hundreds of estates are named.

Ethnic Groups of Northern Southeast Asia, prepared by William L. Thomas, Jr., under the direction of John F. Embree, Southeast Asian Studies, Yale University, 1950, 1:2,500,000, colored, 26 x 30 inches. Accompanies a gazetteer of the same title.

Major Ethno-Linguistic groups and Minor Population groups are the main breakdowns on this map, the base of which was compiled from the Asia 1:1,000,000 series published by the Army Map Service, 1942-45.

Distribution of Cholera, 1816-1950, American Geographical Society, 1951, 1:50,000,000, colored, 25 x 38 inches (Plate II, Atlas of Diseases). Briesemeister Elliptical Equal-Area Projection.

Prepared by Dr. Jacques May, Head of AGS, Department of Medical Geography. Issued as supplement to Geographical Review, April, 1951, which contains an article by Dr. May describing the map. The central portion of the map traces the historical routes of major pandemics. Other maps on the sheet show: 'Permanence of Cholera, 1923-1950' for Asia; 'Egypt Cholera Epidemic, September 18 to December 5, 1947'; 'Monthly Occurrence of Cholera in India'. Small insets outline areas affected during major occurrences, $1.50.

South America, National Geographic Society, October, 1950, 1:8,000,000, colored, 39 x 27 inches. $.50 on paper, $1.00 on linen. Index $.25.

Accompanied by an index with 6,942 place names. Seven insets show adjoining islands, a physical map of South America and the location of the continent in the western world.

Geologic Map of South America, Geological Society of America, 1950, 1:5,000,000, colored, two sheets each 34 x 47 inches, plus legend sheet in Spanish and Portuguese.

Prepared by George W. Stose under a committee of the Geological Society of America in cooperation with the American Geographical Society and the U.S. Geological Survey from maps supplied by government bureaus of the South American countries. Geologic cartography by Lewis B. Pusey; 48 color combinations identify formations.

Geologic-Tectonic Map of the United States of Venezuela (except the Territory of Amazonas and part of the State of Bolivar), Geological Society of America, 1950. 1:1,000,000, colored, 32 x 58 inches base map by Shell Company, 1945, printed by Williams and Heintz Company, Washington, D.C.

Compiled by Walter H. Bucher of Columbia University for Servicio Técnico de Minería y Geología, Venezuela. Data supplied by the latter and Caribbean Petroleum Company, Creole Petroleum Corporation, Mene Grande Oil Company, North Venezuela Petroleum Company, and Compañia Consolidada de Petroleo. Eighteen formations are shown by color combinations and symbols. One inset shows the 'Gran Sabana', another outlines the areas controlled by the various oil companies. Attractive and authoritative.

The series, edited by Richard Tarunsky under the direction of Dr. Franz Heske, depicts the distribution of forestation, various kinds of trees, extent and location of lumber and woodwork industries, and extent and channels of international lumber trade. It is planned to be completed in 1952. Subscription price: approx. $119.

Kriegsfolgen-Karte Westdeutschland, 1939-1950, compiled by Karl-Otto Gassdorf and Dr. Manfred Langhaus-Ratzeburg; published at Frankfort a/m by Verlagsbuchhandlung Karl-Otto Gassdorf, 1950, 1:500,000, colored, 72 x 48 inches.
An excellent postwar map containing a mass of data on the population and industrial pattern of western Germany. All minor subdivisions are shown. A statistical pamphlet accompanies the map(412 pp.).

SSSR-Yertopeyskaya Chast-Fizicheskaya Karta, by Glarnoye Upravleniye, Geodezii i Kartografii pri Sovete Ministrov SSSR, 1950, 1:2,500,000, colored, four sheets, 64 x 51 inches. Conic equidistant projection. In Russian.
An official physical map of the European part of the U.S.S.R.

ATLASES

Advanced Atlas of Modern Geography by John Bartholomew, New Series, 1st edition, London, Meiklejohn; New York, McGraw-Hill Book Company, 1950, 155 pp. (pp.14-108 colored maps), 39cm.
This new atlas follows the tradition of Bartholomew's advanced atlases, but it has many revisions including modified layer coloring, a more simplified system of geographical coordinates, and the use of population maps of each continent instead of the usual political maps. Specially constructed oblique projections are used to show new concepts of world travel and strategy.

Atlas Général du Congo et du Ruanda Urandi, Institut Royal Colonnial Belge, Brussels, 1948, five parts, folded colored maps, 39 cm., scale of most maps 1:5,000,000.
This atlas is being issued as a series. Four fascicules and an introduction have been published to date. When completed it will number over 100 parts, each devoted to a special subject falling under seven major headings: History, Geodesy, Physical Geography, Biography, Anthropology and Cultural Sciences, Political and Social Studies, and Economics. This monumental work intends to present a complete geographical history of the Congo. Each fascicule includes a large folded map, text with bibliography, and tables, in both French and Flemish. It is awkward to handle since it is issued in portfolio.

Atlas of Denmark, by Niels Nielsen, translated by W.E.Calvert. Published by Royal Danish Geographical Society, Copenhagen, H. Hagerup, 1949, V.I.The landscapes by A. Schou (text 29 cm., atlas 56 cm.).
In Danish and English the atlas contains excellent block diagrams and maps showing geomorphology. The text is filled with photographs and documented with bibliographies.

Atlas of Islamic History, compiled by Harry W. Hazard, maps by H. Lester Cooke, Jr., and J. McA. Smiley, Princeton University Press, 1951, 49 pp., colored maps 28 x 38 cm. (Princeton Oriental Studies, V.12).
Intended for the use of students, businessmen, and government officials concerned with Near and Middle East affairs. In addition to maps of each Islamic-

century there is a conversion table of Islamic and Christian dates and an index of 2,000 place names.

Atlas-Guia de los Misiones Españoles, Consejo Superior de Misiones, Madrid, 1947, VI, America, 780 pp., 154 colored maps, 44 cm.

This voluminous work devotes maps and text to all the countries of the Western Hemisphere which contain Spanish missions, Canada excepted. The maps for each country locate the religious, social, and cultural activities of the various religious orders of the Catholic Church. Tables give the addresses and vital statistics of the properties, by orders. Three appendices index the countries, congregations, and places. The atlas was issued in an edition limited to 1,000 copies. Volume 2 will be devoted to Spanish missions in the rest of the world.

Atlas International Larousse, Politique et Economique, In French, English and Spanish, published under direction of Jean Chardonnet. Preface by André Siegfried. Paris, Librarie Larousse, 1950, 240 pp., 58 colored maps, 50 cm.

This atlas aims 'to produce an up-to-date work in synthetic form; a work which is both original and possesses scientific worth'. An air-age view of the principal political and economic facts is given on small scale maps at the expense of the detailed precision found in other political atlases. However, comprehensive texts supplement the small-scale maps. This is one of the best postwar atlases which have appeared.

Atlas of the Tanganyika Territory, Department of Lands and Mines, Survey Division, Tanganyika Territory, 2nd edition, Dar es Salaam, Government Press, 1948, 35 large maps (partly colored), colored diagrams, 46 x 48 cm.

Text and tables on versos of some maps include Physical Section, Biography, Human Geography, Industry and Commerce, Statistical Section, Historical Section, and Gazetteer. Six of the 27 map plates are entirely new while the remainder are revisions of those which appeared in the 1942 edition. The compilers have tried to arrange the format so as to present the historical, physiographical, economic, and climatic factors in a simple form.

Grosser JRO Weltatlas, edited by Ernst Kremling, Munich, JRO-Verlag, 1949, 118 pp., 28 maps, 45 cm.

Eighteen large maps cover the world, continents, and groups of countries, with emphasis on Europe. A supplement, 'Deutschland-Spezial Karten', containing ten sectional maps of Germany was also issued separately under the title: JRO Deutschland Spezialatlas fur Organisation, Handel und Verkehr. Most of the maps are folded into a loose-leaf format. In addition to making it awkward to consult, the many folds make the atlas less durable.

Mapas Españoles de America, Siglos XV-XVII, by the Duke of Alba, Madrid, printed by Editorial Maestre with maps in collotype by Hauser and Menet, 1950. Distributed by Libreria J. Villegas, 351 pp., 79 maps, 50 x 35 cm.

This elaborate portfolio atlas depicts the spread of western Christian civilization by Iberian navigators. The facsimile maps were reproduced from originals in the archives and libraries of Europe. It took twenty-four years to complete this work which is well documented. The text accompanying each map gives its description, history, and toponymy plus a bibliography. The appendix contains a complete index of persons and institutions mentioned in the text. The atlas would be more useful to scholars if the maps had been reproduced on a larger scale.

Landform Map of Canada, by Erwin Raisz, 1950, 1:6,500,000, colored, 30 x 35 inches. For sale by the Institute of Geographical Exploration, Harvard University, $1.00.

Physiographic map prepared for the Environmental Protection Section of the Office of the U.S. Quartermaster General. Hydrography by Robert L. Williams. The map shows more topographic features than any other map of Canada at a comparable scale. Two insets show the physiographic provinces of Canada and its relation to other north polar countries.

Tectonic Map of Canada, Geological Association of Canada with the support of the Geological Society of America, 1950, 1:3,801,600, colored, 41 x 58 inches.

Attractive pastel color combinations show twelve different geologic formations. Extensive marginal notes give credit for compilation and sources of material.

Northwestern Canada, Transportation Facilities - 1950, Department of Mines and Technical Surveys, Surveys and Mapping Branch, 1:3,200,000, colored, 30 x 23 inches.

An official map for general use. Shows in red motor and winter tractor roads, steamer routes, airfields, seaplane anchorages, and radio stations. The margin contains a 'table of distances in miles by air between main centers along principal flying routes'. The map also shows schools, hospitals, nursing stations, trading posts, and missions.

Western Europe, National Geographic Society, December, 1950, 1:2,500,000, colored, 37 x 28 inches, $.50, index $.25.

Accompanying index contains 8,683 place names.

Italie, Terre de Saints et de Sanctuaires, Editions du Témoignage Chrétien, Paris, 1950, 1:1,800,000, colored, 20 x 26 inches. Printed by G. de Agostini, Milan. For sale by Catholic War Veterans, Washington, D.C. $1.00.

An attractive pictorial map showing Italy's famous saints, churches, and shrines. Prepared for the Holy Year by Vsevold Niculin, ' cosmographus', whose style is similar to that of Ernest Dudley Chase. On verso: a list of names appearing on the map.

Catholic World, G. de Agostini, Milan, 1950, 1:39,000,000, colored, 25 x 36 inches. In English, printed by Itagleo. For sale by Catholic War Veterans, Washington, D.C. $1.00.

This colorful world map, prepared for the Holy Year, 1950, shows the distribution of Catholics (Oriental and Latin) and mission territories. Locates sites of Eucharistic World Congresses, Catholic universities, diplomatic and apostolic representations. The Cardinals of the Sacred College are pictured on the lower portion of the map flanking a portrait of Pope Pius XII in the center.

Weltforstatlas, by the Zentralinstitut fur Forst-und Holzwirtschaft in Hamburg-Reinbek, 1951, colored, fifty sheets proposed varying in size and scale. Text in German, English, French, and Spanish. Place names in German only. Four sheets have appeared:

'General View on the Forest Distribution in Northern Eurasia', 1:10,000,000, 21 x 33 inches,
'General View on the Forest Distribution in France', 1:2,000,000, 21 x 27 inches,
'General View on the Forest Distribution in Germany', 1:2,000,000, 21 x 27 inches,
'General View on the Forest Distribution in Great Britain', 1:2,000,000, 21 x 27 inches.

THE INSTITUTE OF GEODESY: PHOTOGRAMMETRY, AND CARTOGRAPHY AT THE OHIO STATE UNIVERSITY

Guy-Harold Smith

In the late autumn of 1950 the Board of Trustees at The Ohio State University approved the organization of an Institute of Geodesy, Photogrammetry, and Cartography. This new Institute, an outgrowth of the Research Laboratory on Mapping and Charting that has been in operation for a number of years, is charged with the responsibility of developing courses and curricula in the three fields represented. The Institute is now under development and in a very real sense is a cooperative enterprise involving several departments and three colleges of the University.

At the outset a single master curriculum was developed, utilizing to a very large extent courses offered by the several departments involved. This basic curriculum will provide limited opportunities for the development of terminal sequences in geodesy, photogrammetry, and cartography. The departments that are contributing the professionally important courses and services include Physics and Astronomy, Mathematics, Geology, Geography, Photography, and Civil Engineering, and the School of Aviation. New courses to serve the educational objectives of the Institute are under development. The curriculum is broadly scientific in character and provides an opportunity for formal training in the specialized fields appropriate to the Institute. The curriculum, leading to the Bachelor of Science degree in the College of Arts and Sciences, and the new courses have been approved by the Council on Instruction, which has final jurisdiction in educational matters. It is expected that the curriculum, with only minor substitutions or adjustments, will be in operation on a limited scale in the autumn of 1951.

It is expected that most students after receiving the B.S. degree will continue their advanced training in the Graduate School in order to develop their professional competency in the fields of the Institute or in related disciplines or departments. Advanced instruction at the graduate level is now available or will be provided as the need arises. Both the personnel and the facilities of the Mapping and Charting Research Laboratory will be available to supplement the regular instructional staff and the physical resources of the several departments of the University.

A number of committees of the Institute have been organized and assigned appropriate responsibilities. These committees are concerned with: Research and Publication, the Curriculum, Professional Development Program, and Space and Equipment. The Institute is also served by an advisory committee consisting of distinguished geodesists, photogrammetrists, and cartographers, whose professional counsel should prove most useful to the Institute.

The program of the Institute in its initial stages of development has been concerned with the organization of courses and curricula to meet educational objectives. But the Institute also will encourage research, sponsor symposia, and cooperate with the professional societies in the continued development of geodesy, photogrammetry, cartography, and closely allied fields.

THE AMERICAN GEOGRAPHICAL SOCIETY

The Society has completed the following cartographic projects during the past year:

1. Three entirely revised sheets of its Millionth Map of Latin America: Roraima (North B-20), Barranquilla (North C-18), Jaguaribe (Soitu B-24). These sheets are in reproduction.
2. Three sheets of its Millionth Map with revision of transportation only: Tegucigalpa (North D-16), Istmode Tehuantepec (North E-15). Ciudad de Mexico (North F-14). Compilation completed.
3. Revised drawings for the three Latin American sheets of Map of the Americas, 1:5,000,000. These sheets are in reproduction.
4. The first two sheets of an Atlas of Distribution of Diseases: World Distribution of Poliomyelitis, 1900-1950 (Pl.1), and Distribution of Cholera, 1816-1950 (Pl.2). A third map, Distribution of Malaria Vectors, has been compiled. Other maps of the Series (which is contemplated to comprise 25 sheets) being prepared include Helminthiases, Typhus, and Encephalitides.
5. Numerous maps for the Geographical Review and Focus and book publications.
6. A series of topographical trail maps for the revised edition of the Society's New York Walk Book. Printed in four colors.

The compilation for a new single-sheet map of the Americas, bipolar oblique conic conformal projection, has been finished. This map, to be reproduced on the scale of 1:12,500,000, will be printed in colors with hypsometric layer tints. Town classification will be revised according to the latest census information. The sheet will include small inset maps showing rainfall efficiency, natural vegetation, land use, and urban centers.

A book, Map Sketching from Aerial Photographs, which is in essence an introduction to the whole subject of photogrammetry, is being prepared under the direction of O. M. Miller. The preliminary manuscript will be completed by the end of 1951.

THE UNIVERSITY OF BRITISH COLUMBIA

Vancouver, Canada. A full year course in Cartography was given last year and a new graduate course in Field Methods and Mapping was introduced, for which enrollments were excellent. Dr. Mackay continued his research in cartographic methodology and has prepared a companion study to his isopleth article. A full-time map assistant has been procured to aid in the cataloguing of the department map collection, which is probably the best of the Canadian universities.

THE CATHOLIC UNIVERSITY OF AMERICA

Washington 17, D.C. A one-semester course, 'Cartography and Graphics', is offered in connection with a program leading to a master's degree. The enrollment for cartography is quite small, but the members of the Department have drafted and had printed two-color maps of Maryland and Virginia for use in faculty and student research. One student undertook a bathometric survey of Broad Creek, a small arm of Chesapeake Bay, and ultimately produced a map showing the submarine configuration by means of 2-foot contours. An anthropology student who took cartography has completed for publication a map showing the distribution of traditional Indian family hunting grounds between the Albany and Lawashi Rivers in Canada. Another student, interested in geomorphology, made a block diagram of the Bellefonte quadrangle, Pennsylvania.

DARTMOUTH COLLEGE — Hanover, New Hampshire. Work in cartography increased three-fold during the last semester with an enrollment of thirty-seven students. This increase was due partly to the war scare and partly to 'piling up' of students as a result of Dr. English's impending recall to active military service. The course will be continued next year although Van English will be on military duty for two full years.

DENOYER-GEPPERT COMPANY — Chicago, Illinois. Recently four new persons have joined the professional staff at this Company. These are Walter M. Albee, Mrs. Ruth Rutherford, Miss Lillian C. Flemming, and John C. Hofer. Mr. Albee has an M.A. from Columbia University. He has written geographical articles on western United States for the Columbia Lippincott Gazetteer and the Necrology for the 1946 edition of the New International Yearbook. He is now a sales correspondent and a research and editorial assistant at Denoyer-Geppert. Mrs. Rutherford received an M.A. from Northwestern University. Since graduation, she has done editorial work for Encyclopaedia Britannica and has taught at North Park College in Chicago. She is now doing editorial and advertising work for Denoyer-Geppert. Miss Flemming and Mr. Hofer received Master's degrees from the Department of Geography at the University of Illinois. Each has come to Denoyer-Geppert directly upon graduation and is an editorial assistant to Dr. Clarence B. Odell, Managing Editor.

FLORIDA STATE UNIVERSITY — Tallahassee, Florida. The Department will consist of seven members this year, headed by Henry F. Becker. In addition a teaching assistantship will be held by a recent M.A. from the Department. Harry F. Brubaker returned for the summer session after a year's leave for doctoral work at the University of Michigan, while David E. Christensen has been granted an extension of leave to continue residence at the University of Chicago. John H. McMurry has received his Ph.D. from the University of Michigan.

The cartographic offerings of the Department have been expanded to four courses, and will include a course in applied cartography under the auspices of the Army Map Service. Robert L. Leathers, who handles the cartographic work, has received specialized training at the Army Map Service in Washington, D.C., in preparation for teaching this course. The Department has been approved for army training programs, if they become necessary, and would offer courses in both map making and map intelligence.

THE GEORGE WASHINGTON UNIVERSITY — Washington, D.C. A two-semester course in cartography is offered, the purpose of which is to teach students how to design maps for more effective presentation, the ultimate aim being the production of a map in black and white for inclusion in a thesis or published paper. A course in Map Interpretation was offered for the first time this summer and was taught at the Library of Congress where the vast map collection was a tremendous asset.

THE UNIVERSITY OF GEORGIA — Athens, Georgia. The usual work in cartography and photogrammetry has been offered during the past year. Preparation of black and white topographic maps covering Clarke County, Georgia, from aerial photographs has commenced, at a scale of about 1:4,000. Field mapping is going to be an integral part of a course in field training in geography to be

inaugurated during the coming year. Base maps of downtown Athens and the campus of the University have been prepared by some advanced students. Plans are also made for students to prepare a detailed sample manuscript 1;1,000,000 population map of the portion of the Southeast United States in which Athens is located for exhibition at the IGU meeting next year when plans for a world population map at that scale will be further elaborated.

HARVARD UNIVERSITY — Institute of Geographic Exploration, Cambridge, Massachusetts. The Landforms of Canada (1:6,000,000) showing scores of hitherto unmapped features is now published. In the cartographic laboratory the following were outstanding: Don Gilman's remarkable map of private hydroelectric power in the United States; Miss Betty Keating's detailed cartogram of the agriculture of Massachusetts; W. Nees' ingenious map of air traffic facilities in New England; Art Rohn's house types of Africa; and Professor Austin's charts of bird migration. The map collection of the Institute received about 15,000 maps last year, which are processed with the help of Mrs. Kirk Bryan.

UNIVERSITY OF ILLINOIS — Urbana, Illinois. Two new staff members with experience in the teaching of cartography have been added to the Department of Geography, and a $6,000 special budget appropriation made it possible to buy a portable auto-focusing projector which will be used to enlarge or decrease the scale of maps. The University Photographic Laboratory is working with the Department in experimental reproduction techniques, an example of which is the colored ozilid overlay maps reproduced on acetate. The extensive collection of the map and airphoto library is located in a room adjacent to the cartography laboratory. Three members of the Department teach cartographic courses which include: Map Compilation and Construction, Map Reading and Interpretation, Field Geography, Interpretation of Aerial Photographs, Problems in Cartography, Area Analysis, and Advanced Field Geography. The total enrollment for the 1950-51 year was 121 and two closely related courses (photogrammetry and Maps and Cartobibliographical Aids) are offered outside the Geography Department. Cartography majors have been able to 'earn and learn' by working on two cartographic projects; one was an industrial location research program, and the other involved the revision of an atlas for the Geographical Publishing Company. During 1950 a book containing two fold-in maps compiled and drawn by R.L. Carmin was published (Economic Aspects of Atomic Power, by Schurr and Marschak). The maps were 'World Waterpower Resources' and 'Electricity Generating Costs for Selected (World) Points'. A limited number of these maps are available as reprints from Mr. Carmin. Fourteen graduating majors have taken cartographic positions, twelve with the Federal Government and two with private concerns.

UNIVERSITY OF ILLINOIS LIBRARY — Urbana, Illinois. The Map Library of the University now contains 127,000 maps, 18,500 aerial photographs of Illinois, and 2,500 atlases and books relating to map care, map bibliography, map reading, and map making. The Freeman Collection of maps relating to America was a valuable addition to the old and rare map collection, which includes a copy of the Tatton map of the Pacific, 1600. Recent additions are a 1777 Jeffreys map of North America and a Laurie and Whittle 1749 map of America. Henry Popple's British Empire in America, 1733, was another recent acquisition. Bill M. Woods, Map Librarian and Instructor in Library Science, gives a course each year, 'Maps and Cartobibliographical Aids'.

KENT STATE UNIVERSITY — Kent, Ohio. The Geography Department is planning a special program in the field of cartography, in cooperation with the Army Map Service, looking toward the training of students in the skills used in map-making in order that they may be qualified for government positions. The program will be initiated in the fall term of 1951.

LIBRARY OF CONGRESS — The Map Division now has a collection of more than 2,000,000 maps, 17,000 atlases, and several hundred globes. The set-maps have been fully indexed and filed by areas in 500 new steel map cases installed in the air-conditiined Annex this year. A Summer Project, carried out in cooperation with several universities and learned societies, resulted in processing approximately 100,000 maps formerly held in dead storage. The Library has just installed a laminating machine to mount maps up to 30 x 40 inches in acetate sheets or with both acetate and cloth. During the past year the Map Division published eight articles, prepared nine formal exhibits, and microfilmed its 45,250 card file of the Bibliography on Cartography. Copies of the fifteen reels of 16mm. film can be purchased from the Photoduplication Service of the Library. The Division has also become the headquarters of the central office of the A.A.G.

UNIVERSITY OF MARYLAND — College Park, Maryland. The Atlas of China, now under compilation at the University of Maryland, will consist of about 200 maps and 320 charts and graphs. These will pertain mainly to topography, climate, agriculture, population, land use, mineral resources, transportation, etc., of China. The basic data of these maps and charts have been and will be secured principally from the most up-to-date Chinese sources available. Most of the maps and charts have already been sketched in rough form and await final drafting, while others are still in the process of being compiled. It is also intended that a considerable amount of textual material will go along with the Atlas in order to explain the basic pattern shown on some of the maps.

MICHIGAN STATE COLLEGE — East Lansing, Michigan. Paul C. Morrison is drawing maps in connection with an Office of Naval Research contract for study of the Turrialba Area of Costa Rica. Andrew D. Perejda is producing a map series under a map research grant offered by Michigan State College for the year 1951-52. In both the Elementary and Advanced Cartography courses the laboratory has a capacity for fifteen students, and Photo Interpretation and Photogrammetry courses carry a student load of twenty-five. The course in Survey of Maps and Mapping carries an enrollment of twenty to thirty. Interpretation of Topographic Maps is taught by a geologist. Field Mapping Techniques, a course for geographers, is taught in the spring quarter.

UNIVERSITY OF MICHIGAN — Ann Arbor, Michigan. Field work in mapping is offered by the Department of Geography in cooperation with the University of Illinois and Northwestern University at the University Geography station near Seney, Michigan. Classroom courses consist of a theoretical course on projections with some other features, a course in map reading, and a course on the history of cartography in which the development of the outlines of the world is traced through ancient maps. This is made possible by the excellent collec-

tions of the Clements Library. The cartographic illustration of several volumes, innumerable articles, and maps has been done in the laboratory by advanced students. The intent of the program is to train geography students adequately in cartography rather than to turn out cartographers at the doctoral level.

MIDDLEBURY COLLEGE — Middlebury, Vermont. A one-semester course in Cartography has been offered for the past three years, and many students report that cartography is one of the most useful aspects of their training. A cartography exhibit of student work during commencement week was featured. Rowland Illick has been working on a series of economic and environmental maps which have been reproduced as film positives to serve as overlays on a landform map of New England. He intends to display the student cartography work when the New England geographers visit Middlebury in October, 1951.

UNIVERSITY OF MINNESOTA — Minneapolis, Minnesota. David Sopher will direct the cartography program at this institution, having joined the Department of Geography this fall. With two new cartography courses, the Department now offers a full year of formal course work in the subject. A well equipped cartography laboratory and a separate laboratory for the departmental draftsman are included in the Department's new quarters in Ford Hall.

THE UNIVERSITY OF OKLAHOMA — Norman, Oklahoma. Harry Hoy reports the completion of his East Africa map, and adds that he has experienced a lot of trouble this summer with the acetate sheets expanding at different rates and with the ink sticking to upper sheets. His Tanganyika map is in the hands of the AMS, and the Southeast Asia map will be delivered in the near future.

THE PENNSYLVANIA STATE COLLEGE — State College, Pennsylvania. The Map Institute is developing the cartographic program of the Division. Fifty-five students enrolled in the Map Interpretation course during the spring semester, and Aerial Photogrammetry courses continue to be very popular. During the last three years $12,000 has been spent on new equipment, and there is now a library of about 5,000 aerial photographs. George Deasy is in charge of the cartographic work. New means of representing cultural data on maps have been studied recently, and the presentation of mineral and manufacturing data on maps has also been considered. A course in Map Construction has been offered this summer for public school teachers.

RUTGERS UNIVERSITY — New Brunswick, New Jersey. Andrew Clark has left to accept a professorship at the University of Wisconsin, and Guido G. Weigend has become an Associate Professor and Acting Chairman of the Department. John Brush has joined the Department to replace B. Ross Guest, who has accepted a position in Washington, D.C.

VIRGINIA GEOGRAPHICAL INSTITUTE — Charlottesville, Virginia. The cartography shop is smaller than in several previous years, but cartographic and allied design and graphic aspects of geographic techniques remain the special fields of investigation. Consultation with Erwin Raisz and A.K. Lobeck on physiographic and allied diagramming, and with Robert M. Coffin on

design and graphic presentation has been very helpful. Geza Teleki and Norman J. W. Thrower are working out some block-diagram series. Mr. Thrower is rapidly developing a distinctive style of presentation. Graphic representations are being experimentally developed as aids in ready understanding of the character and differences of areas by the educated layman. This project, for technique development, is conducted under the direction and supervision of Sidman Poole, Wayne Wallace, and Charles Crittenden, with the support of the Office of Naval Research.

WAYNE UNIVERSITY

Detroit, Michigan. Students are trained to do practical work in cartography in one or two semesters, depending on individual ability. They are then engaged on projects, under the direction of staff members, for which the better cartographers are frequently paid substantial sums by firms, clubs, and individuals in the community. Wayne University Cartographic Laboratory is publicized as much as possible. Some of the projects undertaken are listed below:

Map of Michigan Real Estate Evaluation
Map of Michigan Sales Tax Collections
Map of Population Changes by Wards in Detroit
The Detroit-Plymouth Industrial Corridor Map
Population Map of Michigan
Population Map of Metropolitan District of Detroit
Map of the Population Changes in the United States
Map of Population Division of Metropolitan Cities of the United States
Population Map of the United States (under construction).

During the past year twenty students took the undergraduate course and ten took the graduate course in Cartography. Forty students took a course in Map Intelligence, and the Army Map Service will assist with this course next year. Cartographic work for four published articles and four master's theses was produced last year. Dr. Stilgenbauer has made considerable progress in 'dot-mapping' the population distribution of the United States for the 1950 census. An artistic map of South Africa using colors was produced during the past year in the Department. Dr. Goodman directed the work on the map. The Department also produced a piece of equipment for enlarging and reducing maps by means of lens and mirror.

UNIVERSITY OF WISCONSIN

Madison, Wisconsin. Cartographic activity at this institution now includes five cartography and air photo interpretation courses given during the last two semesters by Arthur H. Robinson and Kirk H. Stone. The combined enrollment exceeded 200 and included a number of foreign students, one of whom came on a French scholarship to study cartography. The Map and Air Photo Library now contains between fifty and sixty thousand maps and air photos. Olga Balutanski has been appointed as Librarian, following the resignation of Eileen Degen. Edward Juza, Cartographic Assistant, was called to duty with the Army, and his place was filled by Andrew Burghardt until July, when Mr. Burghardt left to join the Gousha Map Company in San Jose, California. James J. Flannery, a Ph.D. candidate, will teach cartography at the University of Kansas next year. Maps in the two-volume Harper, An American History, and the Knopf, The European World, were prepared by James J. Flannery; those in the Harvard Press, The United States and France, were prepared by Arthur H. Robinson. 'A Simple Method for Constructing the Stereographic Projection,' by James A. Barnes, has been accepted by Surveying and Mapping. Arthur Robinson's article, 'The Use of Deformational Data in Evaluating

World Map Projections," was published in the March issue of the Annals. His Essays on the Cartographic Technique has been submitted for publication, and he is progressing on a new textbook in cartography.

YALE UNIVERSITY

New Haven, Connecticut. One year ago the Cartographic Laboratory was established to aid all departments in the preparation of maps and charts. It supplies aids for classroom use in the form of wall maps and charts, desk maps, and drawings for slides to the several departments. The History Department has been the largest single customer, while the Geography Department was second, followed closely by the Anthropology and Sociology Departments. A second purpose of the Laboratory is basic research in map-making and map compilation. The computation of some azimuthal projections has been commenced as well as the compilation of a map of the electric generating stations in the United States. As the accumulated desires of the several departments for classroom maps are satisfied, more time will be given to the basic research and map making.

ANNUAL MEETING OF THE NEW YORK, ONTARIO AND QUEBEC DIVISION

The Annual Meeting of this Division is to be held at Cooperstown, New York, on Saturday, October 6, 1951. This is an all-day meeting, and reservations and information may be had by contacting Miss Gladys Gilbert, State Teachers College, Oneonta, New York.

Headquarters and registration will be at the Fennimore House, and Dr. Louis C. Jones, Director of the New York Historical Association, will talk briefly about the Farmers' Museum and the Fennimore House before the tour of these museums.

In the afternoon there will be a panel discussion on the St. Lawrence Seaway. Those participating are Marvin J. Barloon from Western Reserve University, F. Kenneth Hare from McGill University, Reginald H. Pegrum from the University of Buffalo, and a Congressional representative, who has not yet been named.

The annual banquet will be held in the evening at the Cooper Inn. Reservations may be made through Miss Gilbert. The speaker for the evening will be Frank M. Setzler, Head Curator, Department of Anthropology, Smithsonian Institution, who will have colored movies of the National Geographic-Smithsonian Institution Expedition to Northern Australia. A short business meeting and election of officers will be held preceding Mr. Setzler's lecture.

ACTIVITIES OF AMERICAN GEOGRAPHERS AND CARTOGRAPHERS

LLOYD D. BLACK, Department of State, represented the Foreign Service Institute as an observer during the last week of the Institute on Contemporary Africa, held at Northwestern University, June 25 to August 4.

S. W. BOGGS, produced a world map in color, 'National Claims in Adjacent Seas' for an article of the same title in the Geographical Review, April, 1951, as well as four black and white maps for the article 'Delimitation of Seaward Areas Under National Jurisdiction' in the American Journal of International Law, April, 1951. Mr. Boggs is now completing a world map showing U.S. immigration quota areas. On August 22 Mr. Boggs commenced a five-week trip to the Pacific Coast.

AL CRERAR, whose paper on Prince Rupert is in the current Yearbook of the Pacific Coast Geographers, was appointed geographer for the Lower Fraser River Planning Board, the first Regional Planning authority to be set up in Canada.

RAYMOND CRIST taught courses on the Caribbean and the Mediterranean Lands at the University of Delaware, Newark, during the summer, before visiting Pinar del Rio, Cuba, to work on Problems of Land Tenure and Land Use with the aid of a grant from the Social Science Research Council.

DAVID A. HENDERSON, at present an assistant at the University of Colorado working for his Master s Degree, will join the staff of the Department of Geography at Stanford University next year as an instructor.

ARMIN K. LOBECK has now completed a map of Australia and is enjoying a well-earned rest in Martha's Vineyard with Guy-Harold Smith as a good neighbor.

CARL MAPES, Rand McNally and Company, Chicago, reports that his cartographic interests are being focused upon the historical cartography of America. He gave a course, 'America as Portrayed in the Great Maps and Atlases from the 14th to the 20th Century,' in the Adult Education Program of the University of Chicago, last Spring.

SHANNON McCUNE, who has been serving with ECA as Director of the Far East Program Division and is Chief of the ECA mission in Indonesia, will return to Colgate University for the next academic year, as professor and chairman of the Department of Geography.

MARGARET T. PARKER, Wellesley College, Wellesley, Massachusetts, died in July, 1951. Dr. Parker did her graduate work at the University of Chicago and taught at Wellesley College since 1917. Her major interests were Europe, especially Wales and France, and Asia.

LOUIS L. RAY, Department of the Interior, is in charge of the Alaska Terrain and Permafrost Section of the U.S. Geological Survey, and attended the 25th Anniversary Meetings of the Archiv fur Polarforschung, held in June, at Kiel, Germany.

VIRGINIA ROBINSON, on returning from duty with the State Department in Africa, attended the Institute on Contemporary Africa held at Northwestern University, June 25 to August 4. Miss Robinson is now with the Department of State in Washington, D.C.

DONALD SOUTH was promoted to Assistant-Director of the Regional Planning Division, in the B.C. Government in Victoria.

RAY SPECHT, of the Department of Geography at Wisconsin State College, Stevens Point, was Director of a field trip to New England and Canada during the past summer session.

WILLIAM VAN ROYEN, who has been serving with the Department of Defense, on leave of absence from the University of Maryland, has returned to accept the chairmanship of the Department of Geography at that Institution.

CURTIS M. WILSON, University of Toledo, is presenting Conservation of Natural Resources in the second term of the Summer Session. He is also acting as Assistant Dean of the College of Arts and Sciences, a position from which he resigned last year because of the lack of adequate time for research projects.

JAMES R. WRAY, has worked on a process by means of which multi-color maps may be mimeographed. He has a limited supply of multi-color stencil-duplicated maps and mimeographed copies of a paper he has written describing the process. He hopes that his doctor's dissertation will deal with evolving techniques for a cartographic analysis of urban areas, based upon land use generalization derived by air photo interpretation.

SEVENTEENTH INTERNATIONAL GEOGRAPHICAL CONGRESS

The Executive Secretary for the U.S.A. National Committee of the International Geographical Union is Dr. Walter W. Ristow, who served as Secretary of the A.A.G. 1949-1951. He will be in charge of preparations for the Eighth General Assembly and the Seventeenth Congress of the IGU to be held in Washington, D.C., August 8-15, 1952. Upon completion of his special assignment with the U.S.A. National Committee, he will return to the Library of Congress as Assistant Chief of the Map Division.

The first circular, announcing the General Assembly and Congress of the IGU, has been mailed to more than 4,000 geographers outside the United States as well as to the full membership of the Association of American Geographers and the National Council of Geography Teachers. Additional copies may be obtained from Dr. Ristow's headquarters at the National Research Council, 210 Constitution Avenue, NW., Washington, D.C.

GEORGE P. KELLAWAY: MAP PROJECTIONS

Arthur H. Robinson
University of Wisconsin

MAP PROJECTIONS, by George P. Kellaway. viii and 127 pp., 75 illustrations, 4 appendices. 2nd Edition. Methuen and Company, London and E. P. Dutton and Company, New York, 1949.

This book is designed to present the fundamentals of projections to the student of geography and others who possess but a good working knowledge of the basic principles of elementary plane trigonometry. Insofar as the diagrams and descriptions of the projections are concerned it does so, for they are clear and precise. The organization of the book, however, does little to give the student that understanding of relationships among projections so necessary to an appreciation of the subject.

An interesting feature not usually found in an elementary text is the inclusion of numerous tables and graphs which help to make clear the structural properties (e.g. scale along meridians and parallels) of the various projections. An even more interesting feature is the list of questions selected from those of various examining bodies such as the Joint Matriculation Board, and Oxford and Cambridge Schools Examination Board.

The approach to classification is by way of similarity of construction rather than by way of properties. Because this is conventional it is not particularly bothersome, but the separation of the body of the text in two parts must raise doubts in the reader. For example the logic of treating polar cases of azimuthal projections in one place and fifty pages later, in another chapter and part, treating the equatorial and oblique cases of the same projections escapes this reviewer. The treatment of the sinusoidal and Mollweide in one section, and then the Aitoff together with the interrupted sinusoidal and Mollweide in another, is another case in point.

The significant aspects of certain projections and the suitability of projections for various uses are treated too briefly in comparison to the construction details and as a result give an undue impression of dogmatism, but the book is a worthwhile addition to the library of anyone interested in projections.

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Orient and British India	48	87" x 65"
Palestine	4	43¼" x 55"
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Old World (Eastern Hemisphere)	160	87" x 79"
The World	320	87" x 64"
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Africa	96	69" x 76"
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AMERICAN CARTOGRAPHY THROUGH GERMAN EYES

Eric Fischer
Army Map Service

In the second issue of the 1950 volume of Petermann's Mitteilungen Berthold Carlberg reports on 'Kartographie in den U.S.A.' (pp.113-118). Carlberg is a cartographer who has been connected with Justes Perthes in Gotha for many years. His article is significant because it proves that German cartographers are trying successfully to catch up with developments abroad. Hardly any contribution of value published between 1941 and 1947 is omitted from the text or the bibliography. Carlberg's attitude is somewhat appreciative, occasionally even enthusiastic, e.g. when he mentions the 'heroic achievement' of the completion of the 107 sheets of the 'Map of Hispanic America' at 1:1 million. He voices cautious disapproval of the survival of the obsolete methods employed for the Rand McNally atlas and 'the Procrustean beds of uniform page size for state maps' in the Encyclopaedia Britannica atlas. Carlberg believes there are two unreconciled extremes in American cartography, 'a puritan, sober cartographic presentation of most elementary facts, and the graphic illusionistic, artistic production living up to the potentialities of modern printing techniques.'

Carlberg is primarily interested in new developments beyond the pre-war level, not in giving a complete catalogue. He draws attention, e.g. to government publications designed to teach map reading to a wider public, the addition of Loran curves to naval charts, and many other features. In dealing with the contributions of private cartographers, R. E. Harrison's work is discussed most extensively. In this connection there is an interesting remark to the effect that German cartographers are trying to develop the artistic side of cartography apparently under American influence, just as the Wenschow relief map seems to have stimulated American production in this field, as it actually did.

A lengthy paragraph deals with technical problems, especially with the many new projections. The Mercator projection is cautiously defended as still useful for some purposes.

The last sub-heading deals with the history of cartography, cataloging of maps and general cartographic publications, such as the second edition of the General Cartography, by Erwin Raisz, which is appreciatively compared with the first edition.

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KARTOGRAPHISCHE NACHRICHTEN

Erwin Raisz
Harvard University

This is a new periodical of the Deutsche Gesellschaft fur Kartographie, which was established last year in Bielefeld with Kurt Velhagen as president. The new organization has fourteen regional divisions all over West Germany with the expressed hope that sometime it will include the Soviet zone too.

This first volume contains an ingenious diagram showing the relation of cartography to the other sciences. The constitution of the society is published in full.

Among cartographic news items the following are noteworthy:

USSR. At the headwaters of the Indigirka, a glacier-laden moun tain range, 150x60 km, was surveyed. Here is the highest peak of Northeast Asia, 3100 m.

In the Ural Mountains the Narodnaya at latitude 65 was found 200 m. higher than the Toll pos. Neither is the Khan Tengri, the queen of the Tienshan; it is topped by Pik Pobedy, 7439 m., and by the Pik Stalin, which is still higher.

In Borneo the Kinabalu was found to be 19,000 feet high.

Zelaznik, a new industrial city 12 km. southwest of Beograd, has 18,000 people. Podgorica, now called Titograd, is populated by 50,000.

In Bulgaria north of Rakovski, a new industrial center was called Dimitrovgrad; Sumen is now Kolarovgrad.

In Czechoslovakia Zlin is now Gottwaldov.

Ulan Bator, capital of Mongolia, is now connected by rail with Kiakhta. A list of other new Soviet railways is also given.

The new administrative districts of Red China are:

Northeast China - Fengtien (Mukden) (Provinces: Liaotung, Liaosi, Kirin, Heilungkiang, Chingan, Jehol.)
North China - Peking (Provinces: Hopei, Shansi, Chahar, Suiyuan)
East China - Shanghai (Provinces: Shantung, Anhwei, Kiangsu, Chekiang, Fukien)
Northwest China - Ch'ang an (Provinces: Shensi, Kansu, Ning-Hsia, Ch'ing-Hai, Hsinchiang)
Central China - Hankow (Provinces: Hupei, Hunan, Kiangsi, Honan)
South China - Fan-yu (Canton) (Provinces: Kwangsi, Kwangtung)
Southwest China - Pa (Chungking) (Provinces: Szechwan, Kweichow, Yunnan, Sikang).

The first meeting of the Deutsche Gesellschaft fur Kartographie was held 10-12 May, 1951. Papers by eminent cartographers were followed by an excursion to Rudesheim. The first paper was by the President of the Society, Kurt Velhagen.

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announces the publication of

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Maps of the Near East and of Arabia are coming soon.

CENTRALIZATION OF CARTOGRAPHIC CONTROL IN EAST GERMANY

Arch C. Gerlach
The Library of Congress

The decrees of May 31 and June 1, 1951, concerning the production of maps and charts in East Germany, completely centralize the control of all cartographic work in the Department of Interior of the Deutschen Demokratischen Republik. Those who are interested in the details can find the decrees published in full in Gesetzblatt No.67, June 8, 1951, pp.538-539, but the following quotations and comments are intended to convey to American geographers and cartographers the general effects and implications of those decrees.

'The Ministry of the Interior of the German Democratic Republic shall supervise the entire map service; the manufacture, compilation, printing, reproduction, publication and distribution of maps and charts.'

The comprehensive authority of the Ministry of Interior over all phases of the map service, from the gathering of source materials to the distribution of maps and charts is given additional emphasis with respect to certain scales and types of maps.

'It shall be unlawful to take land and aerial photographs for the compilation and production of topographic maps and charts at a scale of 1:100,000 or larger' ... but ... 'The Ministry may issue such maps for purposes of reconstruction and development of the national economy.'

'Geographic maps and charts at a scale of 1:500,000 and smaller (kleiner) as well as tourist maps, auto maps, railroad maps, city plans, and index maps at an approximate scale of 1:10,000 and smaller (kleiner) may be made only in establishments licensed by the Department of the Interior.'

These regulations effectively cover all maps at scale smaller than 1:10,000 and all topographic maps of a scale larger than 1:100,000. This would permit free publication only of very large scale maps, with no terrain content, for locating hotels in tourist brochures, etc. Applications for permits to make or reproduce maps and charts must be filed well in advance of all work, stating the proposed contents, format, scale and purpose of the maps as well as the intended number of copies, the name of the maker, the firm name, the proprietor's curriculum vitae, an inventory of equipment, and the number of employees in the establishment. Publishing establishments that have been granted licenses for cartographic work must submit quarterly reports on the type of maps and plans intended for publication so that permit for the necessary preliminary work may be granted. Any infractions of the decrees regulating cartographic output are covered by the following section of the decree of May 31.

'Whoever violates the provisions of the present Decree or its implementing provisions shall be punished by imprisonment or a fine, or both, provided no severer penalty is incurred under other provisions of the law. Maps and other objects involved in the criminal act or which were used in committing the criminal act, may be confiscated without regard to their ownership or other rights of third parties.'

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USE OF COLORS ON RELIEF MAPS

Joseph E. Williams
Stanford University

There is an encouraging note in the recent development of American maps depicting relief. General von Hauslab, of Vienna, and later the International Map Committee for the millionth map of the world, set what was thought to be a standard arrangement of colors for relief maps. This pattern was the use of altitude tints for the various levels above the sea in the order of the light green colors for the lowlands and dark brown colors for the mountains and plateaus with occasionally deep red for the highest areas. Justes Perthes of Gotha, Germany, added plastic shading and hachures to improve the simple color layer system. This was a dramatic advance, but Hermann Kummerly of Bern, Switzerland, changed the sequence of colors so that the darkest was for the valleys and the lightest for the mountains and plateaus; then it was possible to add merged-color-illumination for the break-in slope and create a true picture of the relief. This was demonstrated most effectively in his map of Switzerland.

In the United States, Denoyer-Geppert Company pioneered with a map of the state of Pennsylvania which was actually shaded in Switzerland. While the Appalachian structure was well depicted, the map was not a dramatic success because the relief of Pennsylvania is not dramatic. Had states with more rugged terrain been chosen, the delay in the use of merged-color-illumination might not have continued so long. Richard Edes Harrison revived the waning interest with his oblique perspective projections beautifully colored to emphasize relief. Next, the United States Geological Survey produced a very fine map of Yosemite Valley by means of a merged-color-illumination technique. But at last this method has entered the commercial field. Mr. Hal Shelton of the Jeppeson Company in Denver published a route map for the United Air Lines which shows relief in color and shading. Also Mr. Shelton and Jeppeson have recently entered the automobile road map field with a fine relief map of California.

Several universities have been experimenting in the improvement of depicting relief by merged-color-illumination. Because color printing has advanced a great deal since 1914 and the millionth map, it has been suggested that the forthcoming international meeting of world cartographers and geographers review the use of color on relief maps.

Geography in the 20th Century

edited by

GRIFFITH TAYLOR
University of Toronto

This volume of over 600 pages is the work of twenty authors, each of whom is a specialist in the section with which he deals. Its aim is to study the growth, fields, techniques, aims and trends of geography. Characteristics of its evolution since 1900 are stressed.

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NEW MAPS AND BOOKS

BUREAU OF THE CENSUS. Geographic Report Number 1, 'Census Areas of 1950,' is available from the Bureau of the Census for free distribution. This Report contains brief descriptions of the various types of areas for which 1950 Census data are being or will be presented. It also contains a comprehensive list of geographic materials in the form of maps, preliminary releases, final reports and unpublished information on the 1950 Census which is or will be available. Requests for this Report should be addressed to Director, Bureau of the Census, Washington 25, D.C.

THE GEOGRAPHICAL PRESS. Physiographic Diagram of Pennsylvania, Armin K. Lobeck, 1:450,000 and 1:1,000,000. Few regions in the world show such close control of surface features by the underlying geology as Pennsylvania. The folded ranges are textbook examples all over the world. The expert pen of Armin Lobeck shows this relationship in a generalized form. The map includes most of New Jersey and the Hudson River, and two geologic cross sections make the relations very clear. Flying over the Appalachian Plateau one may look in vain for the broad flat uplands shown, but this is a physiographic diagram and not a landform map, with emphasis on characterization and not on exact recording.

C. S. HAMMOND AND COMPANY, INCORPORATED, 521 Fifth Avenue, New York 17, New York. A new 1950 edition of the Atlas of the USSR with legend translated into English by Theodore Shabad, price $1.85, is announced by this Company. Another imported item is a Volume I and Volume II of an Historical Atlas of the USSR, and a third volume has just been published covering the first part of the Twentieth Century. When available, the third volume will probably sell at $1.50, which is the price of Volumes I and II.

Work is being completed on a set of three outline maps, 11 x 17 inches, which will cover Asia. They are drawn on a uniform scale and can be joined together. One Ionoff Outline will cover all of the USSR, another covers the Far East and Southeast Asia, and the third covers India and Southwest Asia. The price is $3.00 per hundred maps.

A limited number of two-page plates of India and Pakistan, to be included in the new edition of the Italian Touring Club Atlas of the World, is available at $2.00 each.

PAN AMERICAN UNION, Washington 6, D.C., prepares a quarterly review appearing in January, April, July and October. This publication provides information about authors, publications, and libraries of use in Latin-American and Inter-American studies. It employs the four official languages of the Organization of American States: Spanish, English, Portuguese and French. Headings and editorial notes are in Spanish and English, and the general bibliography section is in Spanish. Enquiries should be addressed to the Editor. The annual subscription rate is $3.00.

PRINCETON UNIVERSITY PRESS, Princeton, New Jersey, announce July 16 publication of Powell of the Colorado, by William Culp Darrah, 426 pp., $6.00.

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RAND McNALLY AND COMPANY, 536 South Clark Street, Chicago 5, Illinois, announce October 15 publication of a second edition, revised and enlarged, of the Cosmopolitan World Atlas, price $12.50, and a new Standard World Atlas with the maps in split-page format. Price $5.95.

SCHOOL OF AMERICAN RESEARCH AND UNIVERSITY OF SOUTHERN CALIFORNIA, Santa Fe, New Mexico, has distributed No. 15 of their monographs, Studies in Ecuadorian Geography by Edwin N. Ferndon, Jr.

SMITHSONIAN INSTITUTION, Washington, D.C., published a monograph, Quiroga, A Mexican Municipio, by Donald D. Brand, assisted by Jose C. Nuñez, 242 pp., 35 plates of photographs, GPO $1.75.

SOCIAL SCIENCE RESEARCH COUNCIL, 230 Park Avenue, New York 17, New York, has published Area Studies in American Universities, by Wendell C. Bennett, 82 pp., price $1.00.

UNIVERSITY OF CALIFORNIA PRESS, Berkeley 4, California, has published New Spain's Century of Depression, Ibero-Americana: 35, by Woodrow Borah, price $.75.

YALE UNIVERSITY LIBRARY, New Haven, Connecticut, announces publication of a four-sheet uncolored collotype reproduction of a manuscript map of the American West by William Clark, of the Lewis and Clark Expedition of 1804-08. It is the first authoritative map of the west, is extremely detailed, and covers the entire western area from the Great Lakes to the Pacific Coast and from Vancouver Island to the Gulf of California. When mounted the map measures approximately 2 1/2 x 4 feet. Price $7.50.

GLOBEN. Many cartographers of the A.A.G. would receive a wealth of information from this periodical by the Generalstaben Litografiska Anstalt, Vasagatan 16, Stockholm. Besides Swedish official map publications there is a summary of cartographic publications of the world, book reviews, and descriptions of new maps.

Prentice-Hall Takes Pride in Announcing

the NEW

ATLAS OF WORLD MINERAL RESOURCES

Edited by

William Van Royen and Oliver Bowles

This magnificent piece of research, beautifully bound into a 15½ x 12¼ inch volume, presents the facts on the 29 minerals most important in world commerce. It contains a great deal of information that has not appeared in map or graph form for years, if it has appeared at all.

Accompanying the maps is text material on each mineral. A specialist was called in to write each chapter. Each mineral is discussed from the viewpoints of origin, occurrence, principal producing methods, methods of mining and extraction, preparation, reserves, and nationality of control.

This book fills a need that geographers have felt for years. With the power conflict between East and West rising in intensity, its arrival is particularly timely.

Scheduled for Publication November, 1951

PRENTICE-HALL, INC. 70 FIFTH AVENUE, NEW YORK 11

ELEVENTH ANNUAL MEETING OF THE AMERICAN CONGRESS ON SURVEYING AND MAPPING

Well over five hundred persons interested in the fields of surveying and mapping registered and attended the Eleventh Annual Meeting of the ACSM held in Washington, D.C., June 18-20, 1951. Each of the six Divisions participated in the General Plenary Session in addition to individual Divisional meetings. The sixth Division (Education) was organized during the past year and participated in the Annual Program for the first time.

The Cartography Division's part of the General Plenary Session consisted of three papers:

1. Boundary Problems in Cartography, by Arthur R. Hall
2. A Planned Program of Resource Surveys, by Fowler W. Barker
3. Interpretive Cartography, by William E. Davies.

The Division's 'business' meeting featured an illustrated paper by Aaron L. Shalowitz on 'Cartography and the Tidelands Oil Case' and a sound slide-film produced by Monsen of Chicago, entitled 'Type and Its Origin'.

SPECIAL LIBRARIES ASSOCIATION GEOGRAPHY AND MAP DIVISION

New officers of the Division, elected at the annual meeting in St. Paul last June, are:

Chairman, Paul B. Lee,
General Drafting Company,
Vice Chairman, Arch C. Gerlach,
Library of Congress,
Secretary, Arthur Carlson,
New York Historical Society.

At the annual business meeting there was a two-hour discussion of 'Training for Map Librarianship'. Representatives of the Universities of Illinois and Minnesota and Smith College, The American Geographical Society, the Minnesota Public Library, the Army Map Service, the State Department, and the Library of Congress pooled their experiences. Tentative plans were made for the program for the 1952 meetings in New York City, and standing committees were set up on:

Cataloguing Rules for Maps
Map Library Resources of the U.S.
Nomenclature and Boundaries for the chapters of SLA.

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Culture Worlds

Stressing the true central theme of geography—how men live in different parts of the world—this unique beginning text pictures the earth's surface in terms of its utilization and alteration by various culture groups. It divides the world into seven "culture worlds" and these in turn into realms and regions. Then it describes, within each of these separate regions, the natural materials with which man has to work and traces his development there, as well as the development of the cultural landscape.

Major features of the book are the number and scope of its illustrations consisting of 183 new original maps and diagrams. Photographs clarify and enliven the written text. *Published in April — $6.00*

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COMMITTEE ON CARTOGRAPHY

This Committee of the Association has been active and has completed a first draft of the chapter for the A.A.G.-N.R.C. American Geography Project. The Committee consists of Arthur H. Robinson, William E. Davies, Clarence F. Jones, O. M. Miller and Erwin Raisz.

NATIONAL RESEARCH COUNCIL COMMITTEE ON GLOBES

A 'Committee on the Construction and Use of Precise Globes and Spherical Maps' has been set up by the Division of Geology and Geography of the National Research Council. This Committee proposes to study:

(1) The current situation regarding globes - recent steps taken by defense and civil agencies of the Federal Government, and the best globes available today;
(2) Who are the principal proponents of the use of globes;
(3) The current needs of globes, and effective means of using globes;
(4) Problems of physical construction of globes, part-globes and transparent spherical surfaces to use with them;
(5) Plotting and cartography;
(6) The status of basic information required in compiling precise globes - reliability and adequacy of data 'mappable' on globes;

The following types of apparatus are suggested as aids in the study of 'global problems':

(1) Precise globes and part-globes, in several sizes and 'inside-out' concave spherical surfaces;
(2) Aspherical pantograph;
(3) Transparent spherical surfaces in plastics;
(4) Three-dimensional physical relief on globes, of several sizes. Intaglio relief on the inner surface of some translucent globes.

Following is part of a tentative program of the experimentation and development to be undertaken to produce the types of apparatus needed:

(1) Achievement of accuracy and exact duplication of geographical and geometrical delineations on spherical surfaces;
(2) Projection of different subject matter on the inner surface of translucent spherical segments - a sort of 'globarium,' analogous to a planetarium.

The Committee is composed of the following members: Wallace W. Atwood, Jr., S. W. Boggs (Chairman), William Briesmeister, Thomas L. Crystal, Richard Edes Harrison, Arthur Lundahl, Robert H. Randall, Paul A. Siple, C. S. Spooner.

GENERAL CARTOGRAPHY

By Erwin Raisz

Lecturer in Cartography
Institute of Geographical Exploration
Harvard University

McGraw-Hill Series in Geography

Second edition, 348 pages, $6.50

Originally published a decade ago, this was the first American textbook to present the subject matter in a form expressly designed to meet the needs of the college student of geography. As before, simplicity is the keynote of the book, and every effort has been made to treat map making as a geographical science in clear, understandable terms, with a minimum of mathematics.

The book has been thoroughly revised in the light of the many changes in cartography brought about by the demands and exigencies of the Second World War. As a result, the purpose of the text is not to train topographic draftsmen but rather to encourage a deeper understanding of the broader aspects of this complex art, in presenting the true nature, life, economics, and problems of the various parts of the world.

Contents

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HONORS COMMITTEE ANNOUNCEMENT

The Honors Committee will welcome information about activities that may appropriately be recognized by the Association as provided in the By-Laws. In case your copy of the By-Laws is not at hand, the pertinent section reads:

Section 3. Honors. The Association shall encourage meritorious achievements in geography by awarding honors annually in special recognition of outstanding contributions toward the advancement or welfare of the profession in that year, or culminating in that year. The contributions might be in research, applied research, writing, teaching, committee work, administrative work, collaborative work with non-geographers, or in other aspects of geographic professional work. Recognition may take the form of grants for further advancing or implementing the contributions already made, citations, medals, an annual honor roll or plaque, or other form appropriate to the purpose of such recognition. The Honors Committee shall submit to the Council nominations for such awards accompanied by a statement indicating the contribution which forms the basis of the proposed award. At the Annual Meeting the Council shall announce the award of such honors as it may have approved.

Do not assume that the Committee already knows about every fine contribution, or fully appreciates its significance. Put it on paper and pass it on to any member of the Committee or to the Secretary of the Association. The Committee consists of Meredith F. Burrill, Edward L. Espenshade and Harold Hoffmeister.

ROYAL GEOGRAPHICAL SOCIETY

With publication of New Geographical Literature and Maps, No.1 (N.S.) June, 1951, the Society is resuming production of the lists of additions to its Library and Map Room which were suspended in 1940. These lists will give the titles of books and important articles on geography and related subjects, including the contents of geographical periodicals in a number of languages, with brief indications of their scope of references to critical reviews. It is intended to issue two parts a year, the first in June, 1951. Subscription rate for 1951 will be 7s.6d. ($1.25) post free. Orders should be sent to the Office of the Society, 1, Kensington Gore, London, S.W.7.

COLUMBUS EXHIBIT

The Columbus Exhibit at the Globusmuseum in Vienna, 1951, at the quincentennary of the Great Discoverer's birth, reflects the efforts of Dr. Erick Waldan and Robert Haardt, inspired by the public interest in geography of this old cultured city. The 108 items exhibited were mostly reproductions of the documents and maps which led to the discovery. Other maps show the evolution of the outline of the American continen t.

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